

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.

NOTES:

1 IDENTIFY IAW MPP-120

2 MATERIAL: 3K 2X2 TWILL CARBON FIBER PREPREG, AXIOM AX-5112T

3 MATERIAL: #120 E-GLASS EPOXY PREPREG WITH 48% RC;

4 MANUFACTURE IAW MPP-145 SECTION 5.2

5 PRIME PARTS WITH TWO COATS IAW MIL-PRF-85582C, TYPE 1, CLASS N

6 OVERALL ASSEMBLY DIMENSIONS CONTROLLED BY F/N 1 OR 2

7 PART GEOMETRY AND HOLE LOCATION DIMENSIONS CONTROLLED BY CAD MODEL.
FORMAT FILE NAME AS:
"652.25XX(PART NUMBER) XXX(REVISION LEVEL) XXXXXXXXXXXX (PART DESCRIPTION) XX-XX-XX(DATE)"

8 OVERALL ASSEMBLY DIMENSIONS CONTROLLED BY F/N 4 OR 5

9 INSTALL F/N 11-13, AND 15 USING ADHESIVE F/N 14 CONCENTRIC TO HOLES IN F/N 1 OR 2
PRIOR PRIMER DELTA 5

10 CURED AT 250 °F WITH RAMP RATE OF 1-3 DEGREES PER MINUTE, HOLD AT 250 °F FOR 60 MINUTES

11 ZERO DEGREE WARP DIRECTION LISTED ON CORRESPONDING PART DRAWINGS

12 INSPECT IAW XXXXX (TBD)

13 INSPECT DIAMETERS ON ALL HOLES

14 MATERIAL:AR 4315HP ADHESIVE, RESINLAB L.L.C

15 MAX WEIGHT: TBD

16 MAX WEIGHT: TBD

17 MAX WEIGHT: TBD

18 APPLY PLY G1 ONLY WHERE SHOWN

19 APPLY PLY G2 ONLY WHERE SHOWN

20 APPLY MINIMUM 2.00 X 2.00 SQUARES AROUND HOLE LOCATIONS SHOWN. 2.00 WIDE STRIPS
ALLOWED TO STRETCH BETWEEN HOLES THAT ARE LESS THEN 3.00 APART.

21 APPLY MINIMUM 3.00 X 3.00 SQUARES AROUND HOLE LOCATIONS SHOWN. 3.00 WIDE STRIPS
ALLOWED TO STRETCH BETWEEN HOLES THAT ARE LESS THEN 2.00 APART.

22 LAYER THICKNESS TO TRANSITION OVER 1.00-1.50 IN

23 DATUM D IS A POINT

24 ADHERE OUTSIDE BODY/FLANGE OF F/N 8 TO F/N 5 AND F/N 6 USING ADHESIVE F/N 14

25 THICKNESS CALLOUT IS FOR COVER DOOR FLANGE GEOMETRY ONLY

PR16

PR16

REVISIONS

REV.

DESCRIPTION

DATE

APPROVED

MM-DD-YY

P. BRAVO

PROTOTYPE REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED	REASON CODE	REVISED BY
	PR1	INITIAL RELEASE	6-5-18	P. BRAVO		
ALL	PR2	REVISED NOTES AND ALL VIEWS	1-24-19	P.BRAVO		
SHEET 1, 3-5	PR3	REVISED NOTES AND ADDED TOLERANCES	2-5-19	P.BRAVO		
SHEET 1-3, 8, 10-11	PR5	REVISED BOM, VIEWS, AND LAYUP TABLES	6-4-19	P. BRAVO		
SHEET 1, 4-9	PR6	REVISED NOTES, DATUMS, HOLE DIAMETERS, AND TOLERANCES	7-25-19	P. BRAVO		
SHEET 1, 4, 7, 9	PR7	REVISED DRAWING TITLE, NOTES, BOM, AND DATUMS	8-6-19	P. BRAVO		
SHEET 1 AND 3	PR8	REVISED BOM, NOTES AND VIEW	9-12-19	P. BRAVO		
SHT: 1,2,5,8, & 10	PR9	ADDED DELTA NOTE 24 ADDED DETAIL VIEW X FOR COVER RETURN FLANGE ADJUSTED TOLERANCE FOR .07 LAYUP UPDATED LAYUP AREA FOR FWD FACE	2-11-20	Z. MUTTER	MDI	NICK R.
SHT:1,2,5,6,7,8, &11	PR10	ADDED NOTE FOR COVER DOOR FLANGE. ALTERED THICKNESS ON POD. INCORPORATED NEW CALLOUTS. ALTERED THICKNESS ON COVER DOOR FLANGE. INCORPORATED NEW CALLOUTS, REVISED BOM, ADDED FN16.	4-29-20	J.GARDINER	MDI	E.CAHILL
SHT: 4,5,6, & 7	PR11	DELTED 3 FRANGIBLE HOLE LOCATIONS ON POD AND COVER. ALTERED THICKNESS ON POD.	5-6-20	J.GARDINER	MDI	E.CAHILL
SHT: 1, 5, 6, 10, 11	PR12	REVISED LAYUPS FOR POD	6-19-20	Z.MUTTER	MDI	E. ANDERSSON
SHT 7,8,11	PR13	ADDED NOTES FOR CLARIFICATION ADDED DETAIL TO RIB	7-16-20	Z. MUTTER	MDI	NICK R.
SHT 8: D5, D7	PR14	ADDED DIMENSION TO DETAIL X CREATED DETAIL Z REVISED DIMENSION CALLOUT	7-30-20	A. QUAN	MDI	Z. MUTTER
SHT: 1, 4, 6, 8, 10-11	PR15	REVISED NOTE 4, DATUM, AND TOLERANCES. REPLACED P/N'S FOR F/N'S 11-13.	10-6-20	A. QUAN	MDI	E. ANDERSSON
NOTES, SHT:1, 3, 10-11	PR16	REMOVED DELTA 26, ADDED NEXT ASSY, ADDED TOLERANCE TO DOUBLER INSTALLATION	10-29-20	A. QUAN A Q	MDI	E. ANDERSSON

		8	8	16	601.4391	RIVET	CCR274SS3-05	
2	2			15	654.7026	FLANGE DOUBLER (AFT)		
A/R	A/R			14	600.1005	ADHESIVE	14	
2	2			13	654.7019	5 HOLE DOUBLER (AFT)		
2	2			12	654.7018	4 HOLE DOUBLER (AFT)		
4	4			11	654.7017	2 HOLE DOUBLER (AFT)		
		2	2	10	649.4011	WIRE TAB		
		1	1	9	601.1983	RIVET	CCR274SS3-03	
		4	4	8	601.3810	CAMLOC STUD		
		4	4	7	601.3713	QUARTER TURN RECEPTACLE		
			1	6	652.2515	AFT COVER DOOR LH	2 3	5 7
		1		5	652.2514	AFT COVER DOOR RH	2 3	5 7
			1	4	652.2513	AFT COVER LH	2 3	5 7 16
		1		3	652.2512	AFT COVER RH	2 3	5 7 16
	1			2	652.2511	AFT POD LH	2 3	5 7 15
1				1	652.2510	AFT POD RH	2 3	5 7 15
x					652.2504	AFT POD ASSEMBLY RH		
	x				652.2503	AFT POD ASSEMBLY LH		
		x			652.2502	AFT COVER ASSEMBLY RH		6 17
			x		652.2501	AFT COVER ASSEMBLY LH		6 17
2504	2503	2502	2501	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.

QTY

PARTS LIST

ORIGINAL DATE
(MO-DA-YR) 6-5-18
DRAWN BY
EAN
CHECKER
P. BRAVO

DRAWING APPROVAL
P. BRAVO
6-5-18
CONTRACT No.

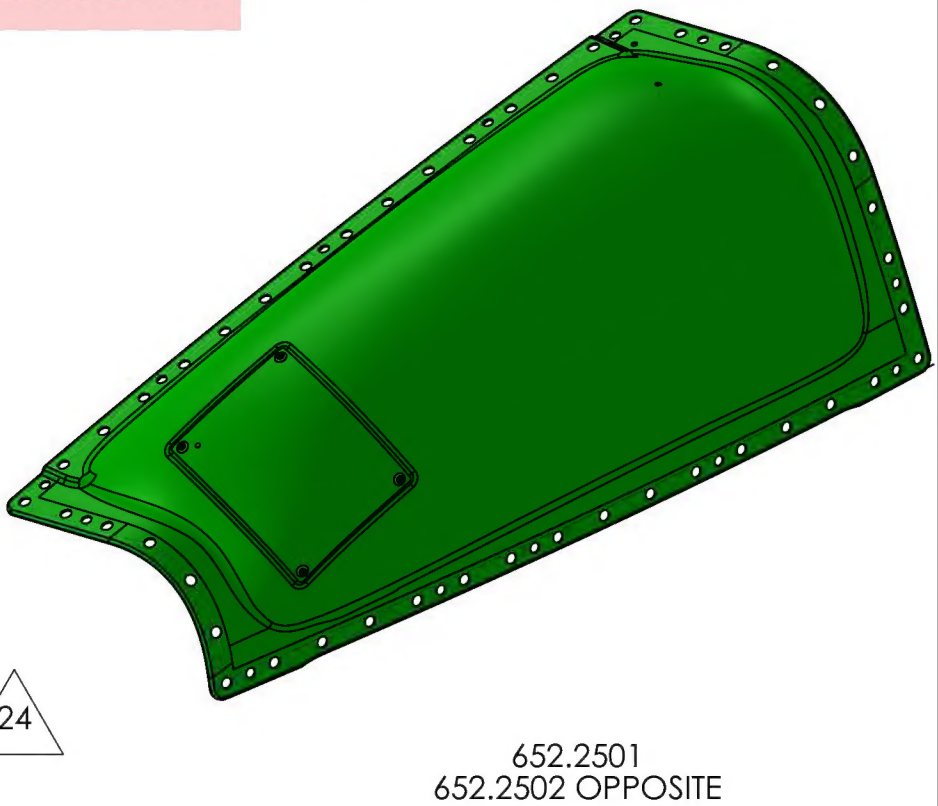
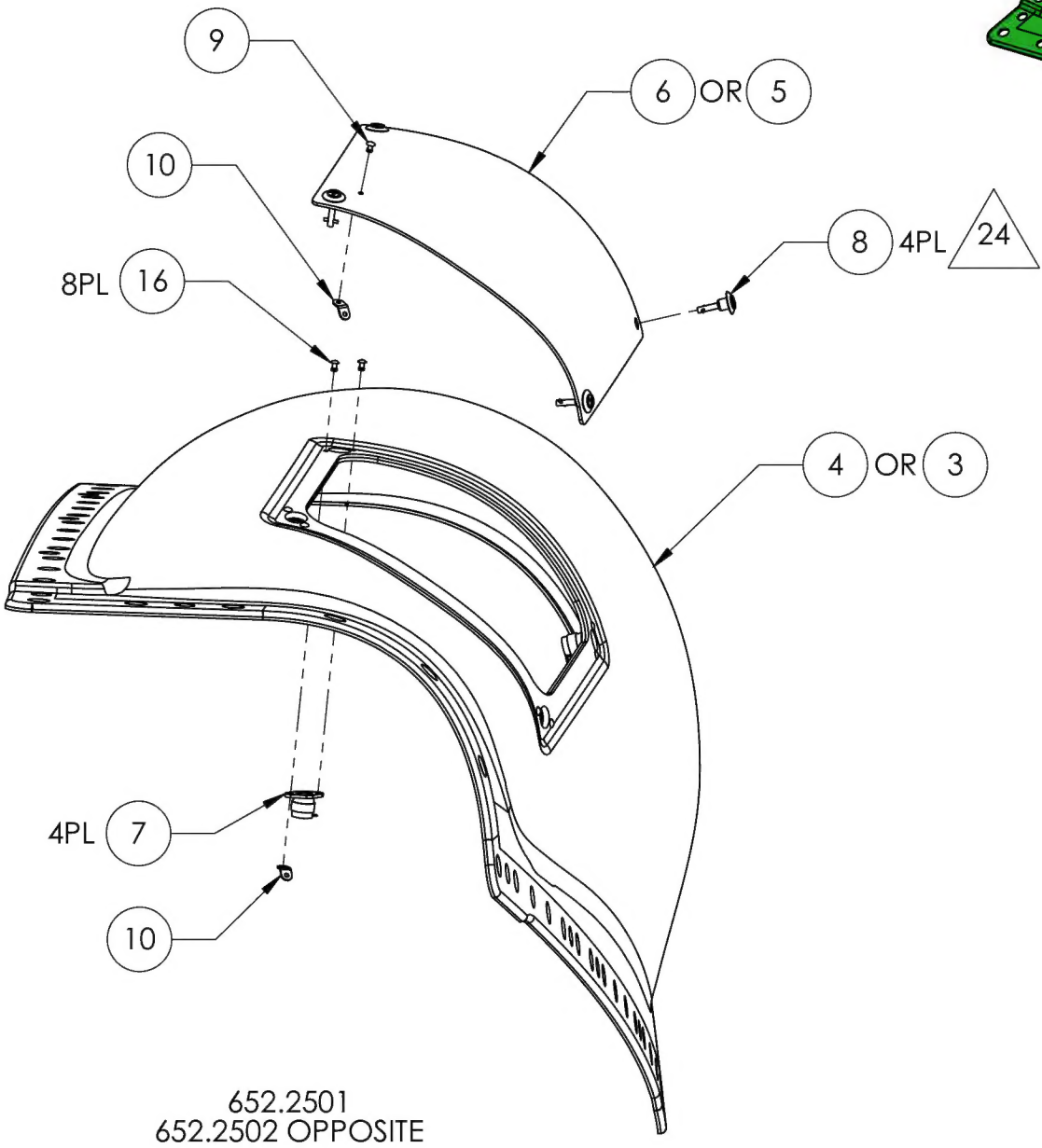
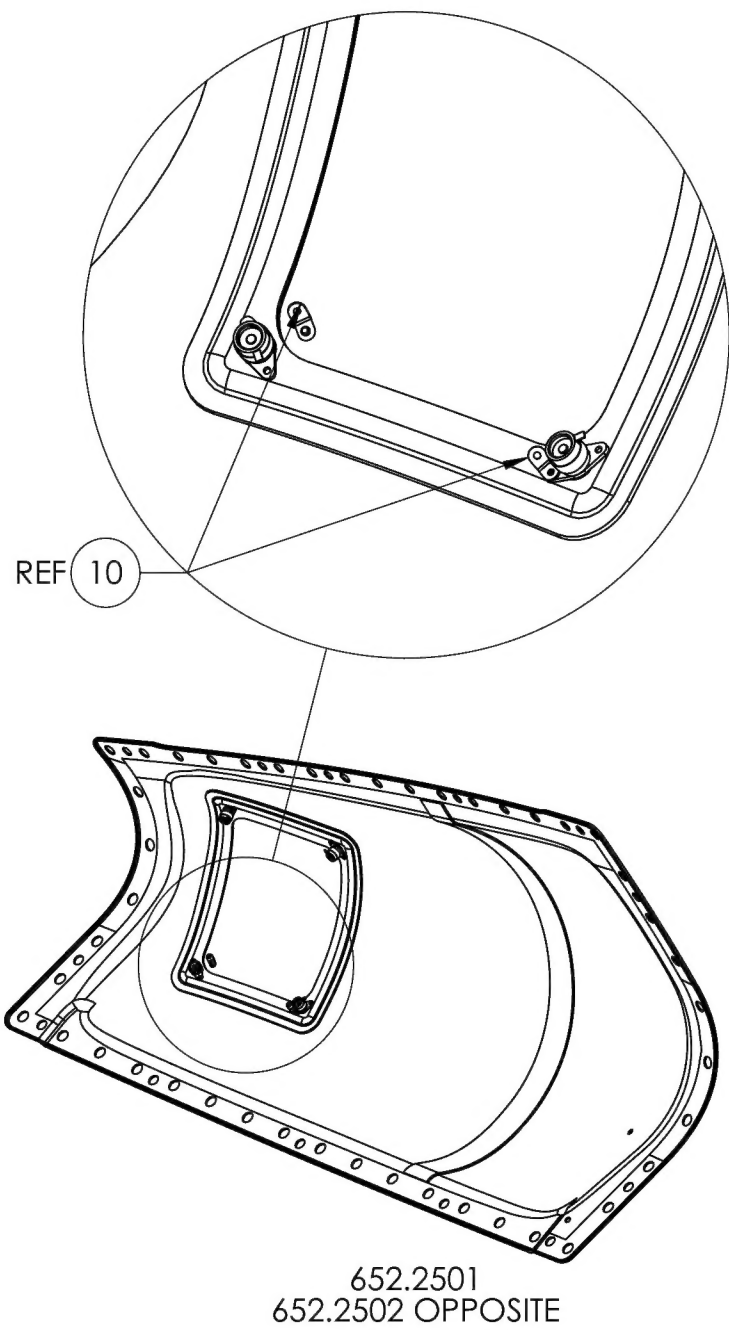
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005
ANGLES ± .5°

DART
AEROSPACE
APICAL INDUSTRIES, INC.
dba DART AEROSPACE
3030 ENTERPRISE CT.,
SUITE A
VISTA, CA. 92081
(760)-724-5300

AW169 AFT POD AND COVER

SIZE
B
CAGE CODE
07MZ6
DWG. NO.
652.2500
REV.
PR16
SCALE NONE
SHEET 1 OF 11

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DRAWING APPROVAL P. BRAVO 6-5-18	
CONTRACT No.	

DART 3030 ENTERPRISE CT.,
AEROSPACE SUITE A
VISTA, CA. 92081
APICAL INDUSTRIES, INC. (760)-724-5300
dba DART AEROSPACE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°

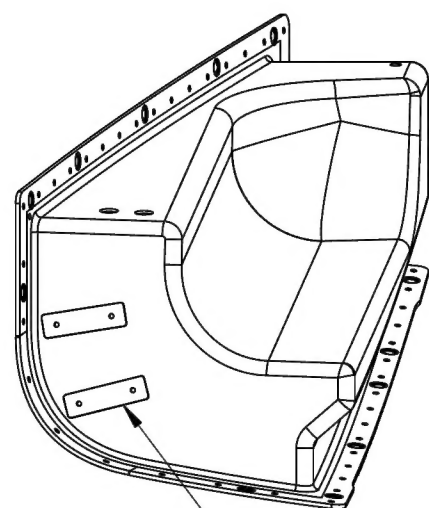
AW169 AFT POD AND COVER			
SIZE B	CAGE CODE 07MZ6	DWG. NO. 652.2500	REV. PR16
SCALE NONE		SHEET 2 OF 11	

A

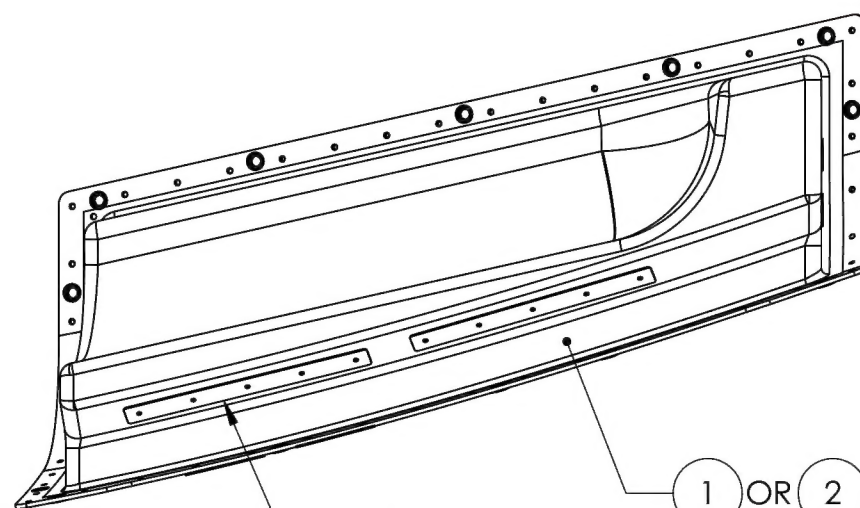
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C

D

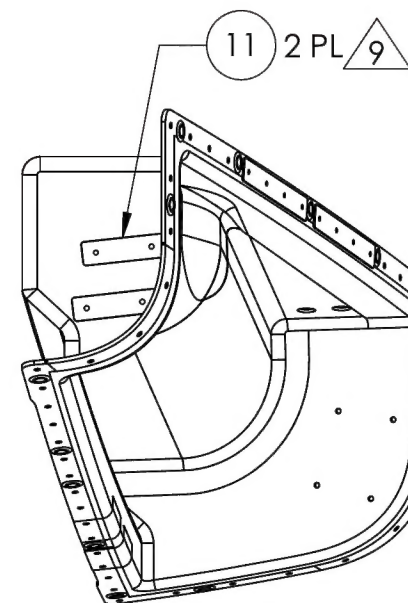


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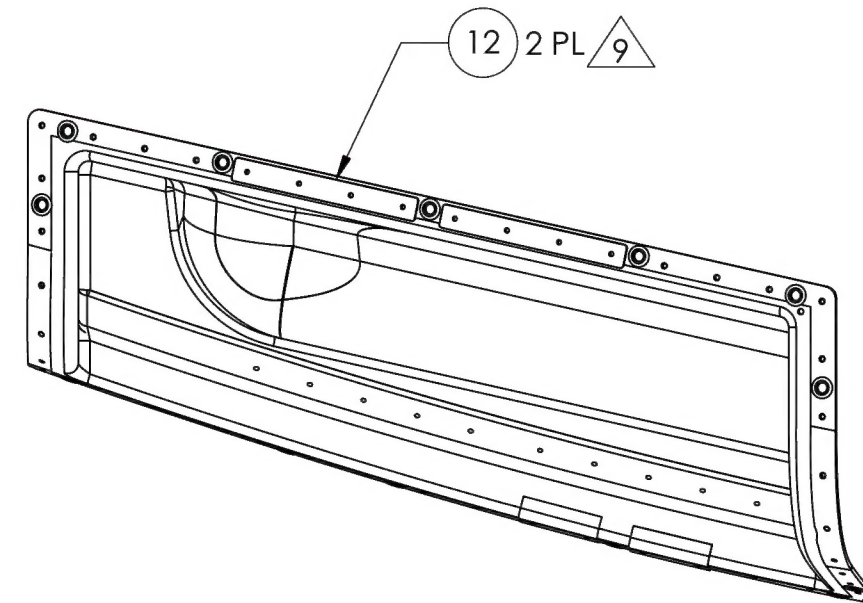


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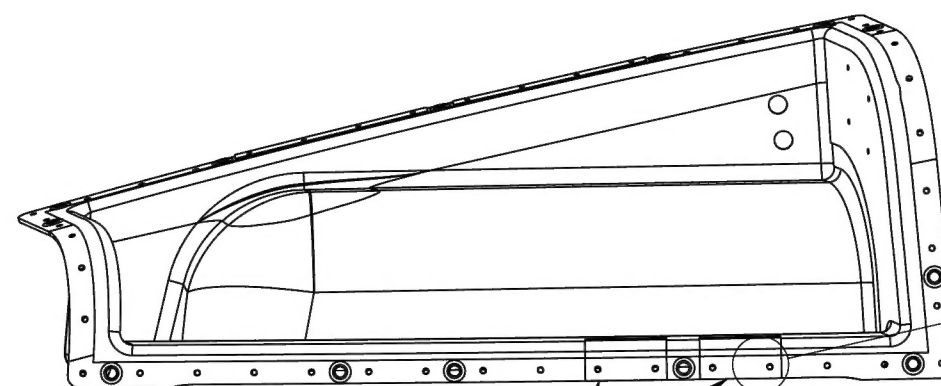
1 OR 2



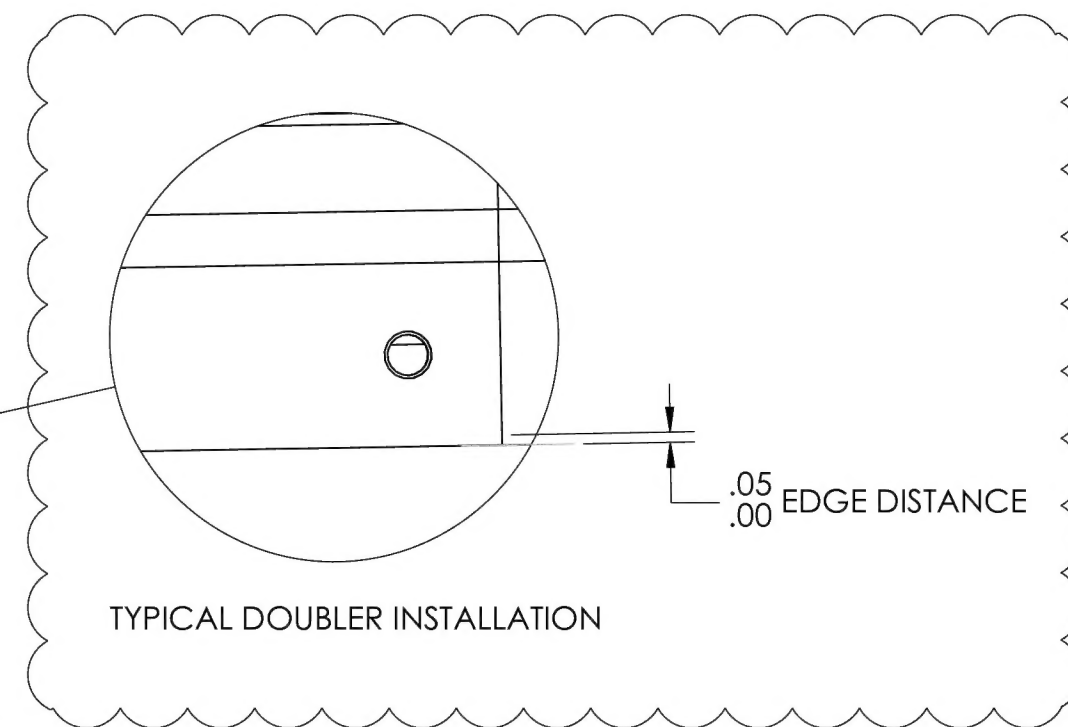
11) 2 PL 9



12 2 PL 9



△ 5 ○ 15



— .05
— .00 EDGE DISTANCE

TYPICAL DOUBLER INSTALLATION

PR16

ORIGINAL DATE (MO-DA-YR)		6-5-18
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DRAWING APPROVAL P. BRAVO 6-5-18		
CONTRACT No.		

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AEROSPACE
APICAL INDUSTRIES, INC.
dba DART AEROSPACE

3030 ENTERPRISE C
SUITE A
VISTA, CA. 92081
(760)-724-5300

AW169 AFT POD AND COVER

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS $\pm .01$
3 PLACE DECIMALS $\pm .005$
ANGLES $\pm .5^\circ$

SIZE B	CAGE CODE 07MZ6	DWG. NO. 652.2500	REV. PR16
SCALE NONE		SHEET 3 OF 11	

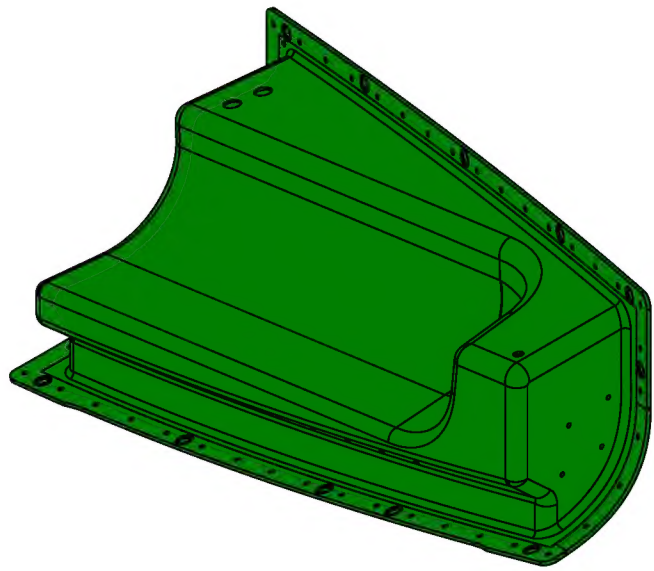
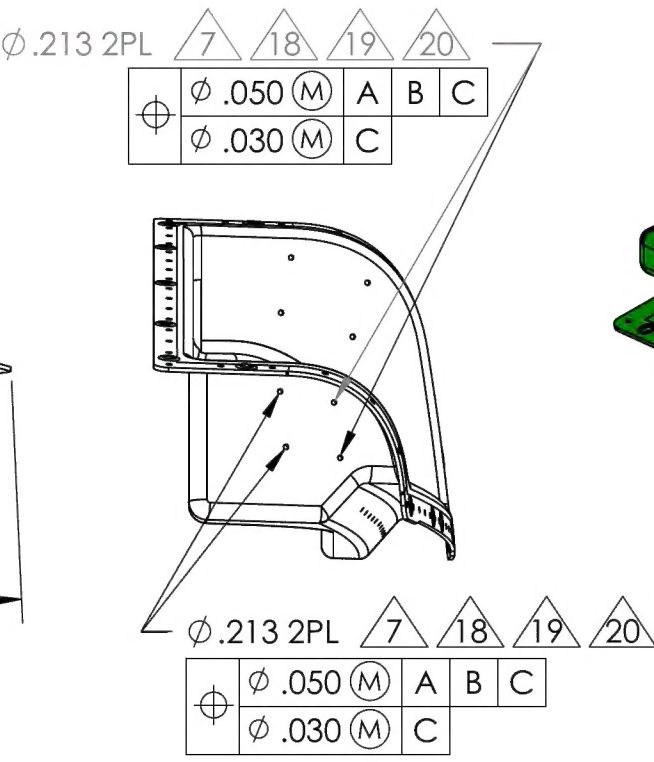
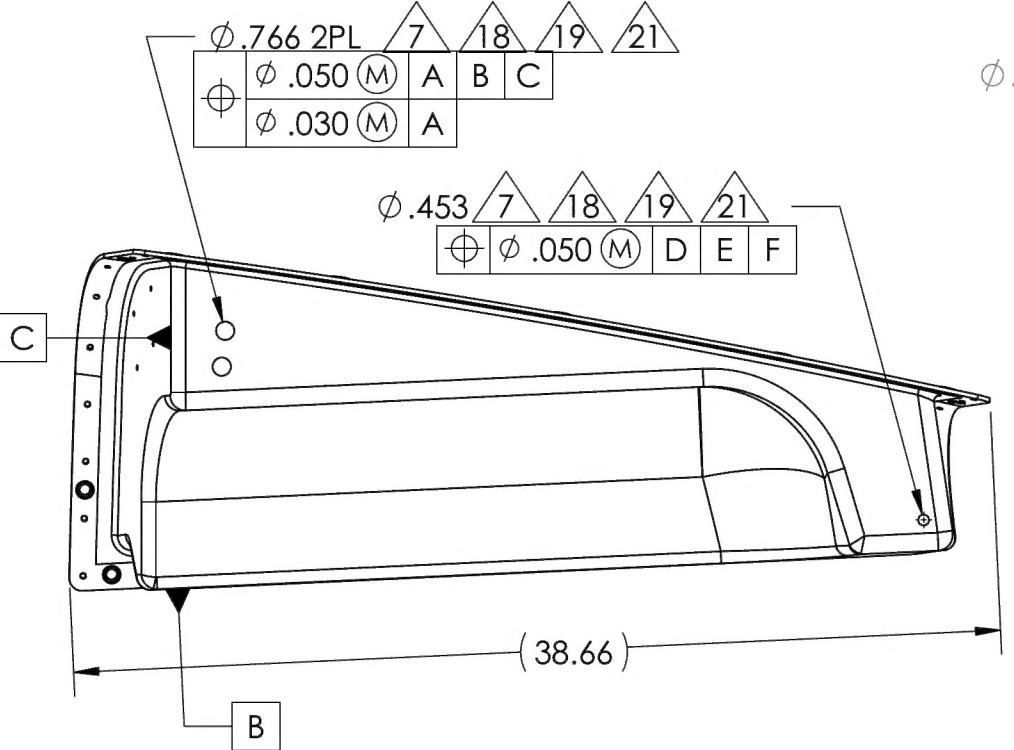
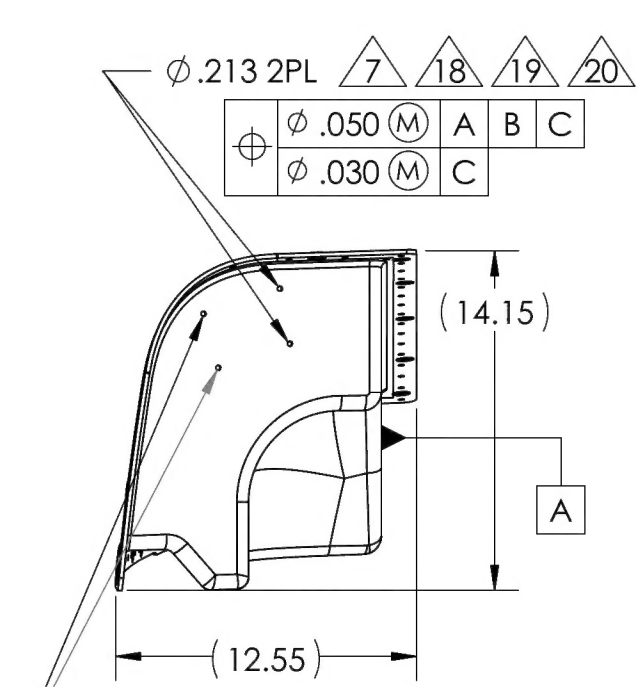
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A

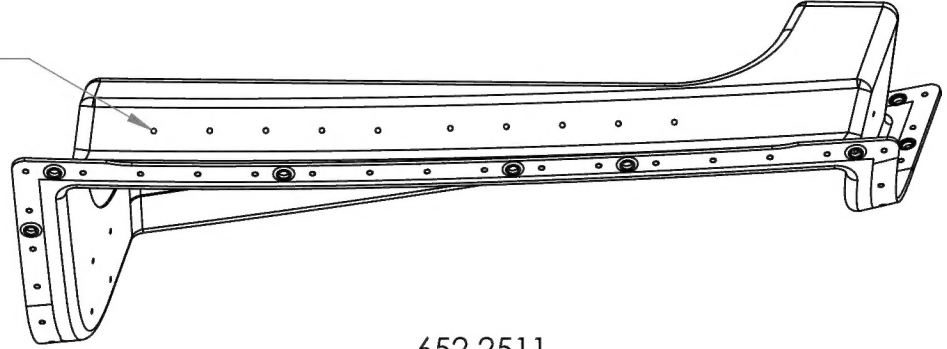
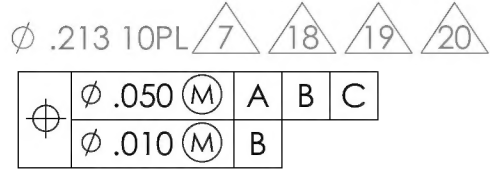
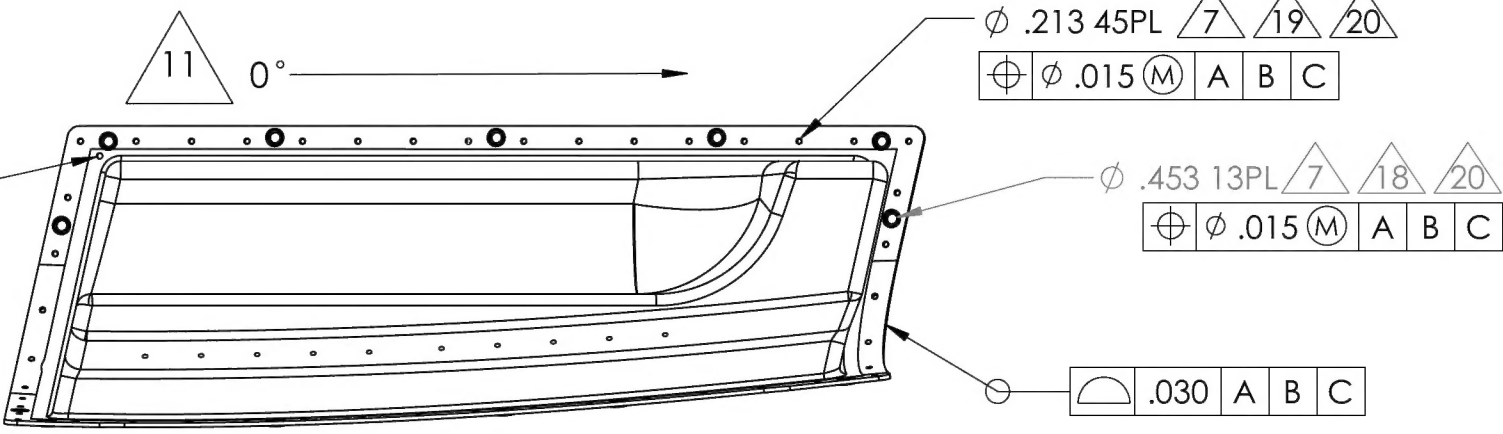
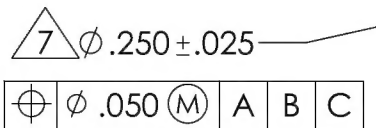
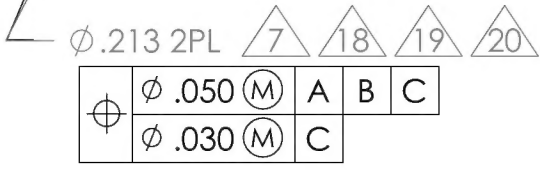
B

C

D



652.2511
652.2510 OPPOSITE



652.2511
652.2510 OPPOSITE

ORIGINAL DATE (MO-DA-YR) 6-5-18		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
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DRAWING APPROVAL P. BRAVO 6-5-18		APICAL INDUSTRIES, INC. dba DART AEROSPACE	
CONTRACT No.		AW169 AFT POD AND COVER	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SIZE B	REV. PR16
SCALE NONE		CAGE CODE 07MZ6	DWG. NO. 652.2500
		SHEET 4 OF 11	

LAMINATE 4(.110)

LAMINATE 1 (.180)

LAMINATE 4(.110)

LAMINATE 1 (.180)

LAMINATE 1 (.180)

LAMINATE 1 (.180)

652.2511, 652.2510 OPPOSITE
LAYER MAP AFT END


22

—LAMINATE 1 (.180)

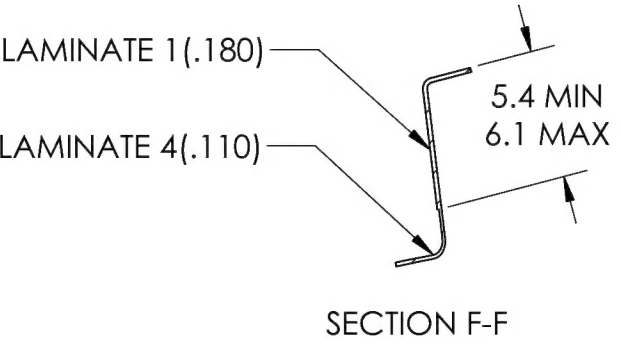
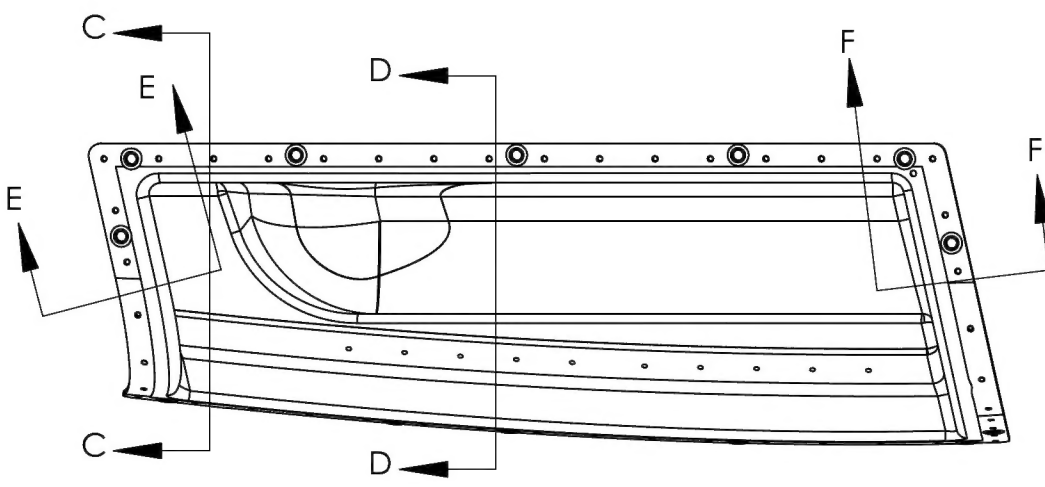
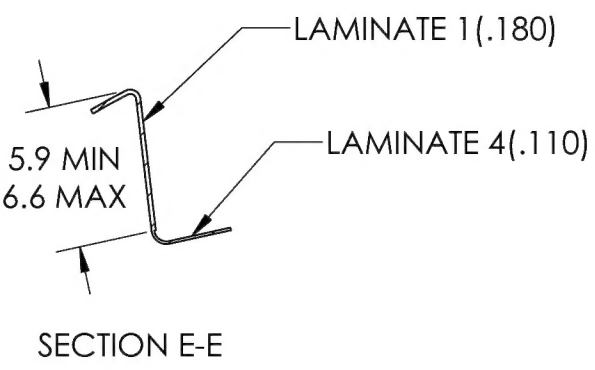
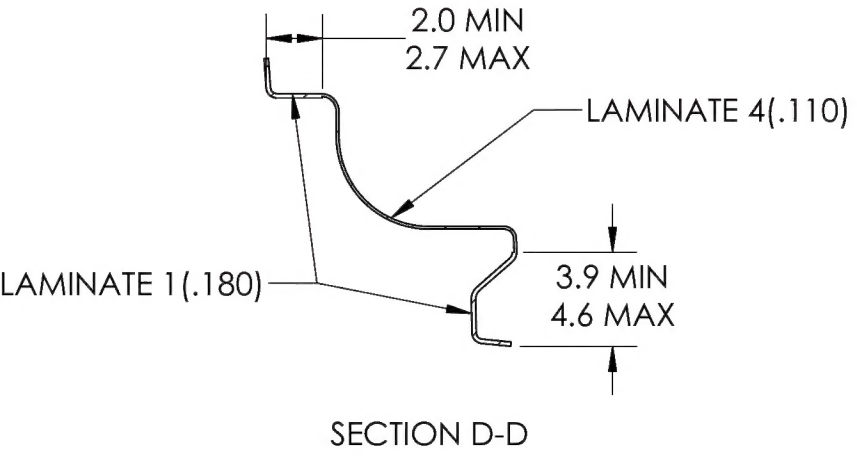
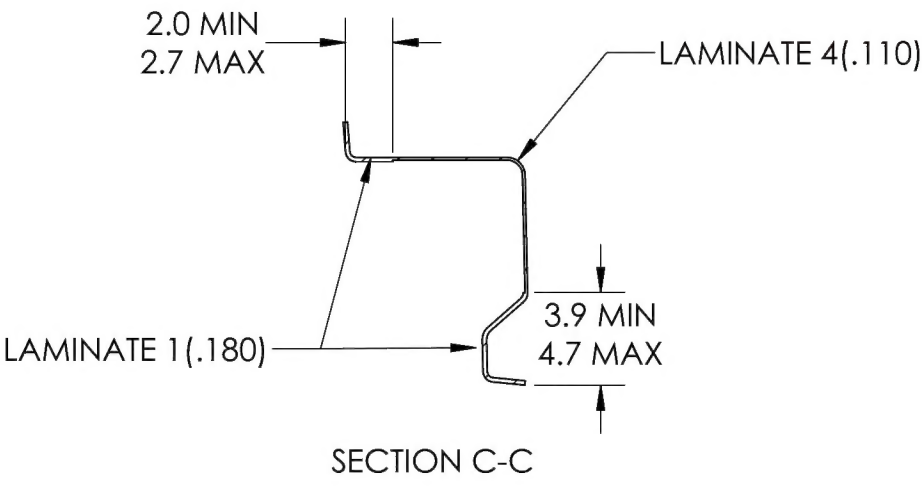
—LAMINATE 1 (.180)

652.2511, 652.2510 OPPOSITE
LAYER MAP FWD END

22

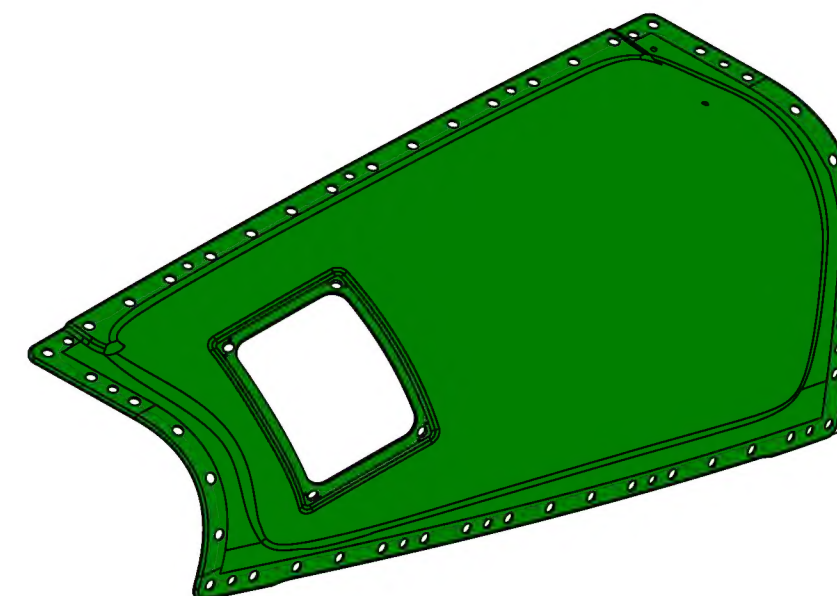
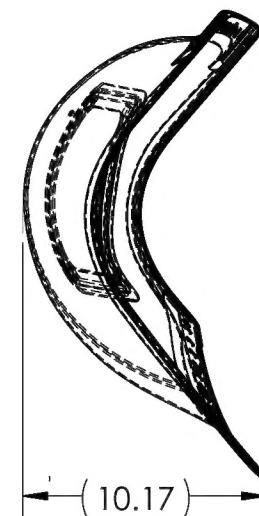
ORIGINAL DATE (MO-DA-YR)	6-5-18	 DART AEROSPACE APICAL INDUSTRIES, INC. dba DART AEROSPACE	3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
DRAWN BY EAW	CHECKER P. BRAVO			
DRAWING APPROVAL P. BRAVO 6-5-18				
CONTRACT NO.				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.001 3 PLACE DECIMALS ±.005 ANGLES ±.5°		AW169 AFT POD AND COVER		
SIZE B	CAGE CODE 07MZ6	DWG. NO. 652.2500	REV. PR16	
SCALE NONE		SHEET 5 OF 11		

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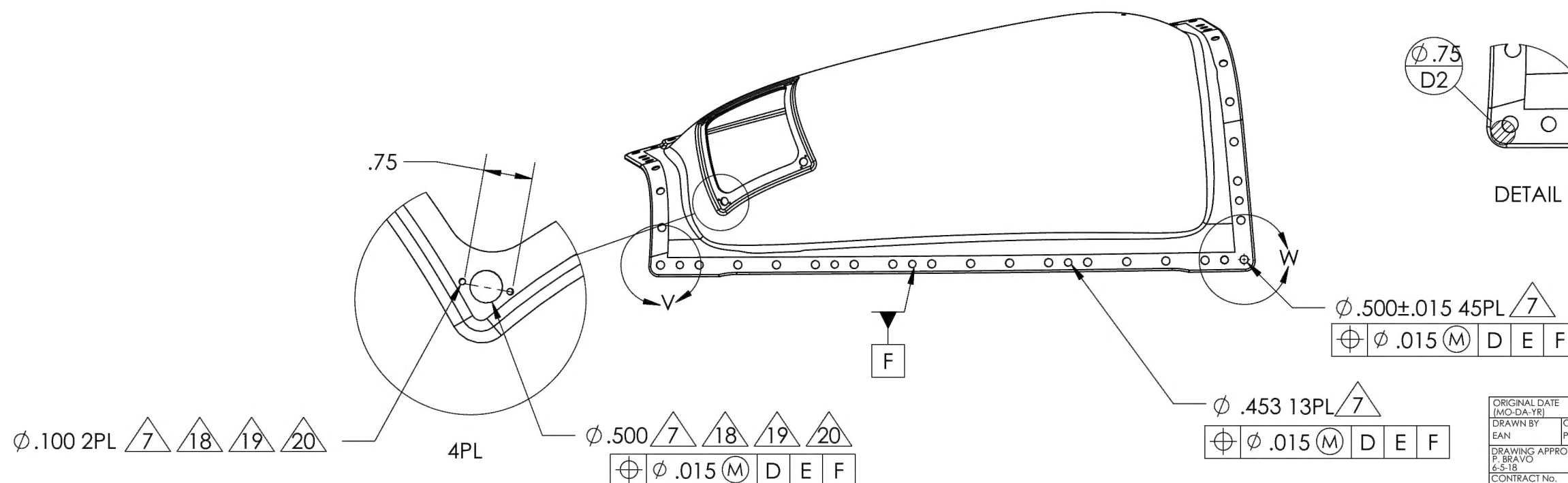
ORIGINAL DATE (MO-DA-YR) 6-5-18		DART 3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
DRAWN BY EAN	CHECKER P. BRAVO		
DRAWING APPROVAL P. BRAVO 6-5-18		APICAL INDUSTRIES, INC. dba DART AEROSPACE	
CONTRACT No.		AW169 AFT POD AND COVER	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ± .5°		SIZE B	REV. PR16
		CAGE CODE 07MZ6	DWG. NO. 652.2500
		SCALE NONE	SHEET 6 OF 11

D



Technical drawing of a mechanical part. A circular feature is labeled $\phi 0.7$ and D3.

DETAIL W




SIZE B	CAGE CODE 07MZ6	DWG. NO. 652.2500	REV. PR16
SCALE NONE		SHEET 7 OF 11	

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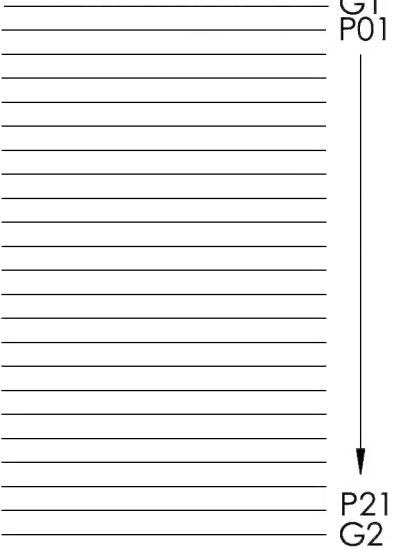


Technical drawing of a rectangular plate with various dimensions and features. The plate is labeled "652.2515" and "652.2514 OPPOSITE". Dimensions include a height of (6.40) and a width of (7.88). Features include a top-left corner with a circle labeled $\phi.25$ J1, a top edge with a circle labeled G and a triangle labeled 11 with 0° , a top-right corner with a circle labeled $\phi.257$ 4PL and triangles labeled 7, 18, 19, 20, a right edge with a circle labeled $\phi.098$ and triangles labeled 7, 18, 19, 20, a right edge with a circle labeled $\phi.030$ and triangles labeled 7, 18, 19, 20, a right edge with a circle labeled $\phi.25$ J3 and a circle labeled H, and a bottom-left corner with a circle labeled $\phi.25$ J2. A label "LAMINATE 2(.070)" points to the right edge. A red box contains the text $\phi.015$ (M) G H J.

ORIGINAL DATE (MO-DA-YR) 6-5-18		 DART AEROSPACE APICAL INDUSTRIES, INC. dba DART AEROSPACE	3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300		
DRAWN BY EAWN	CHECKER P. BRAVO				
DRAWING APPROVAL P. BRAVO 6-5-18					
CONTRACT No.		AW169 AFT POD AND COVER			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.005 3 PLACE DECIMALS ±.001 ANGLES ± .5°					
SIZE B		CAGE CODE 07MZ6	DWG. NO. 652.2500		REV. PR16
SCALE NONE			SHEET 9 OF 11		

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TOOLING SIDE



LAYUP OF PREPREG LAYERS
.180 ^{+0.050}/_{-.010} THICKNESS



LAMINATE 1 - .180in ^{+0.050} / _{-.010} OVERALL THICKNESS			
PLY	WARP ANGLE	MATERIAL	THICKNESS
G1	N/A	△3	.008-.010
P01	0	△2	.008-.010
P02	+45	△2	.008-.010
P03	-45	△2	.008-.010
P04	90	△2	.008-.010
P05	+45	△2	.008-.010
P06	-45	△2	.008-.010
P07	0	△2	.008-.010
P08	+45	△2	.008-.010
P09	-45	△2	.008-.010
P10	90	△2	.008-.010
P11	0	△2	.008-.010
P12	90	△2	.008-.010
P13	-45	△2	.008-.010
P14	+45	△2	.008-.010
P15	0	△2	.008-.010
P16	-45	△2	.008-.010
P17	+45	△2	.008-.010
P18	90	△2	.008-.010
P19	-45	△2	.008-.010
P20	+45	△2	.008-.010
P21	0	△2	.008-.010
G2	N/A	△3	.008-.010

18

PR16

19

TOOLING SIDE



LAYUP OF PREPREG LAYERS
0.070 ^{+0.030}/_{-.015} THICKNESS



LAMINATE 2 - .07in ^{+0.030} / _{-.015} OVERALL THICKNESS			
PLY	WARP ANGLE	MATERIAL	THICKNESS
G1	N/A	△3	.008-.010
P01	0	△2	.008-.010
P02	+45	△2	.008-.010
P03	-45	△2	.008-.010
P04	90	△2	.008-.010
P05	+45	△2	.008-.010
P06	-45	△2	.008-.010
P07	0	△2	.008-.010
G2	N/A	△3	.008-.010

18

19

PR16

ORIGINAL DATE (MO-DA-YR) 6-5-18
DRAWN BY EAN CHECKER P. BRAVO
DRAWING APPROVAL P. BRAVO 6-5-18
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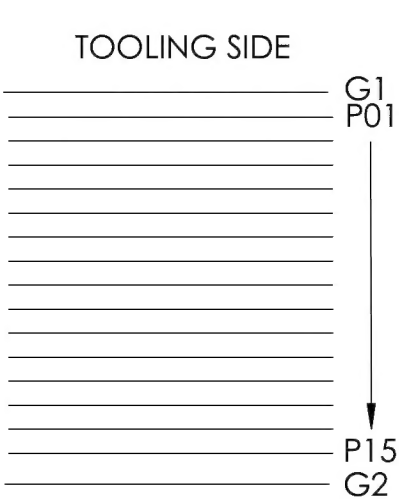
AW169 AFT POD AND COVER

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005
ANGLES ± .5°

SIZE	CAGE CODE	DWG. NO.	REV.
B	07MZ6	652.2500	PR16
SCALE NONE			SHEET 10 OF 11

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A



B

LAYUP OF PREPREG LAYERS
.150^{+.030}_{-.030} THICKNESS

10 11 18 19

LAMINATE 3 - .150in ^{+.030} _{-.030} OVERALL THICKNESS			
PLY	WARP ANGLE	MATERIAL	THICKNESS
G1	N/A	3	.008-.010
P01	0	2	.008-.010
P02	+45	2	.008-.010
P03	-45	2	.008-.010
P04	90	2	.008-.010
P05	+45	2	.008-.010
P06	-45	2	.008-.010
P07	0	2	.008-.010
P08	90	2	.008-.010
P09	0	2	.008-.010
P10	-45	2	.008-.010
P11	+45	2	.008-.010
P12	90	2	.008-.010
P13	-45	2	.008-.010
P14	+45	2	.008-.010
P15	0	2	.008-.010
G2	N/A	3	.008-.010

C

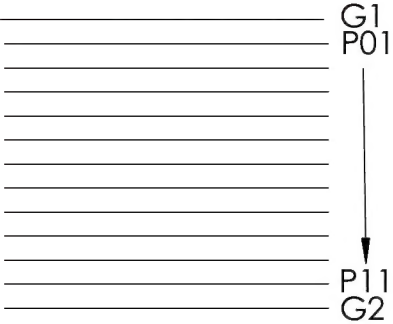
D

18

19

PR16

TOOLING SIDE



LAYUP OF PREPREG LAYERS
.110^{+.030}_{-.025} THICKNESS

10 11 18 19

LAMINATE 4 - .110in ^{+.030} _{-.025} OVERALL THICKNESS			
PLY	WARP ANGLE	MATERIAL	THICKNESS
G1	N/A	3	.008-.010
P01	0	2	.008-.010
P02	+45	2	.008-.010
P03	-45	2	.008-.010
P04	90	2	.008-.010
P05	+45	2	.008-.010
P06	-45	2	.008-.010
P07	0	2	.008-.010
P08	+45	2	.008-.010
P09	-45	2	.008-.010
P10	90	2	.008-.010
P11	0	2	.008-.010
G2	N/A	3	.008-.010

18

19

PR16

ORIGINAL DATE
(MO-DA-YR) 6-5-18

DRAWN BY
EAN

CHECKER
P. BRAVO

DRAWING APPROVAL
P. BRAVO
6-5-18

CONTRACT No.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005
ANGLES ±.5°

SIZE
B

CAGE CODE
07MZ6

DWG. NO.
652.2500

REV.
PR16

SCALE NONE

SHEET 11 OF 11

DART
AEROSPACE

APICAL INDUSTRIES, INC.
dba DART AEROSPACE

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AW169 AFT POD AND COVER